

A method of using finishing aids for advanced finishing control is described. A finishing surface is used generally to induce frictional wear. The finishing aids with preferred in situ control can improve control of the coefficient of friction, the tangential force of friction, a finishing rate, a regional finishing rate(s), a differential finishing rate, and help reduce unwanted defects. A finishing aid can reduce friction. A lubricant is an illustrative finishing aid. The method uses finishing control subsystem having a multiplicity of operative process sensors along with tracked information to improve in situ control of finishing. Differential finishing rate methods are described to differentially finish semiconductor wafers. Differential lubricating film methods are described to differentially finish semiconductor wafers. Planarization and localized finishing can be improved using differential lubricating boundary layer methods of finishing with improved real time control.